

Notice of Allowability

Application No.

09/936,184

Examiner

Taylor Victor Oh

Applicant(s)

UNVERRICHT ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/29/05.
2. ☒ The allowed claim(s) is/are 1-31.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 8/11/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

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Examiner's Amendment and Reasons of Allowance

The Status of Claims

Claims 1-31 are pending.

Claims 1-31 have been allowed.

I. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with an applicant of record, Kirsten Gruneberg on 8/11/05.

II. The application has been amended as follows:

In claim 1 , lines 6-7, the phrase "-- at least one multimetal oxide comprising molybdenum and/or tungsten and bismuth, tellurium, antimony, tin and/or copper--" after the word "is" is replaced with the phrase " at least one multimetal oxide comprising at least one of molybdenum and tungsten, and at least one of bismuth, tellurium, antimony, tin and copper " .

III. The following is an examiner's statement of reasons for allowance:

- The rejection of Claims 1-31 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,740,779 B1 has been withdrawn due to the Terminal Disclaimer filed on 6/29/05;
- The close references for the current invention are Ruppel et al (U.S. 5,821,390) , Ruppel et al (U.S. 5,739,391) and Etzkorn et al (U.S. 5,198,578) .

Ruppel et al(U.S. 5,821,390) discloses a process for the catalytic gas-phase oxidation of propene to acrolein in a multiple contact tube fixed-bed reactor at an elevated temperature on the catalytically active multi-metal oxides with a propene conversion for a single pass of ≥ 90 mol % and an acrolein formation selectivity of ≥ 85 mol % in tube-bundle reactors. The reaction pressure is in the range from 1 to 3 bar and the overall space velocity is from 1500 to 2500 l (s.t.p.)/l/h at reaction temperatures of from 300⁰ to 450⁰ C.

Ruppel et al (U.S. 5,739,391) discloses a process for the catalytic gas-phase oxidation of acrolein to acrylic acid in a multiple contact tube fixed-bed reactor at an elevated temperature

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on the catalytically active multi-metal oxides with an acrolein conversion for a single pass of ≥ 95 mol % and an acrylic acid formation selectivity of ≥ 90 mol % .

Etzkorn et al (US 5,198, 578) teaches a process for oxidizing propylene to acrolein and the oxidation of propylene to acrylic acid in two stages: the first reactor tube contained a catalyst comprising molybdenum, bismuth, iron, and several promoter metals of first-stage catalyst and the second reactor tube also contained a second-stage catalyst similar to the previous ones and furthermore, the acrolein produced in the first stage can be directed without separation to a second reactor operating in series.

The instant invention , however, differs from the prior art in that both Ruppel et al prior art have shown that the propene load in the examples was lower than $(2500:100)-5.4=135$ I/I/h and the acrolein load was lowered than $(2500:100)-4.2=105$ I/I/h due to the prior art reactor with only one salt bath in one temperature zone ;furthermore, Etzkorn et al employs in one temperature zone with the propene load of 112 I/I/h , whereas the claimed propene load is greater than 160 I/I/h and the claimed acrolein load is greater than 140 I/I/h due to the claimed reactor with two salt baths in two temperature zones. Furthermore, there is no motivation in the combined prior art to arrive at the current invention in order to increase the prior art's propene and acrolein load to the corresponding claimed loads. Moreover, the claimed temperature variations among the reaction zones A, B, C, and D are also unspecified. In addition, unless all limitations of the claims are met, there is no prior art rejection. See In re Zurko 59 USPQ 2d 1690 (Fed Cir. 1991) and In re Lee, 61 USPQ 1430 (Fed Cir. 1991).

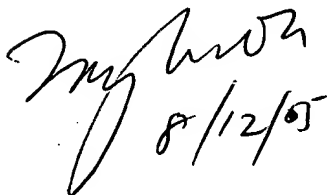
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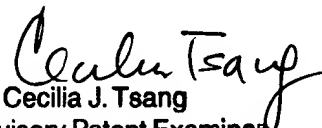
Therefore, the claimed invention would not have been obvious to the person with an ordinary skill in the art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning the communication after allowance such as sending all post-allowance correspondence should be directed to "Box Issue Fee" or faxed directly to PUBS at 703-305-8755. This will expedite the process of these papers.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


8/12/05


Cecilia J. Tsang
Supervisory Patent Examiner
Technology Center 1600